

AMENDMENT

In the Specification

Please replace the Title on page 1, with the following rewritten Title:

A Method for Displaying ~~and Scrolling~~ Data Including Display Status Feedback.

Please replace paragraph 2 on page 5 with the following rewritten paragraph:

A1
It is the object of an embodiment of this invention to provide a novel means to supply visual feedback to the user of a data display system, which will assist in the progressive display and viewing a data file, and thus satisfy the needs of the art.

Please replace paragraph 3 beginning on page 5 with the following rewritten paragraph:

A2
An embodiment of this invention allows the user to, after a view change operation, easily find the start of fresh, previously undisplayed data, with respect to previously displayed data, for any size data buffer or viewable display area. The invention also includes means to collect and process view status information during the viewing process, thus directing the said visual feedback means. The invention further provides means to continue said visual feedback by automatically updating the process at all view change operations. The invention further provides means to capture, organize, and store said status information thus forming a collection of metrics in reference to the viewing session. Said metrics can be used, for example, to survey usage and preferred sections of data files viewed by one or more users.

Please replace the Brief Descriptions of Drawings section on page 6 with the following rewritten section:

BRIEF DESCRIPTION OF THE DRAWINGS

The current invention is best understood when read in conjunction with the attached drawings as outlined below:

AB Figure 1 depicts a typical process of displaying a large data file as shown on the left, with separate representations of different views display screens a user will see as the user progresses or scrolls through sections of said data file. Included are drawings depicting the structure of a typical data file, and representations of typical viewing areas corresponding to viewing different sections of said data file.

Figure 2 shows a flowchart of a typical process for displaying a data file and scrolling through said file with visible feedback.

Figure 3 shows a pictorial representation of a data file where the data is text, and the data file is divided into subsets which are sized according to a display area.

Figure 4 shows a display area with a Graphical User Interface and includes text data displayed in the display area.

Figure 5 shows a display area with a Graphical User Interface and includes text data displayed in the display area, and data marked with shading based on the display status of said data.

Please replace paragraph 2 beginning on page 7 with the following rewritten paragraph:

Ad

Figure 1 depicts the preferred embodiment of the disclosed invention and is a pictorial overview of a user interactive session showing relationships between said data buffer 1 and viewable display areas 2, 3, 4, 16, and 19 shown at various locations stages in the viewing process scrolling through said data buffer 1. Data buffer 1 is a collection of data which may reside in memory or other digital storage location of a computer. Data buffer 1, containing data 5, 6, 7, 8, 9, is pictorially shown as pages sized approximately to be display screens of data. Data buffer 1 contains more data than can fit in a single display area of 2, 3, 4, 16, or 19. When a user has started or resumed a viewing session and may travel from top 5 to bottom 9 of data buffer 1, a viewable display area 2 is shown as it would display a portion of data ~~buffer~~ 6, which is substantially near the top of data buffer 1, is displayed as data 10 on display area 2, and is detected and identified is statused by the system as the currently displayed data 6, ~~and in this particular instance as never before displayed data, and is displayed as such on the display 10,~~ with the size of the data essentially corresponding to the size of the viewable area. Data 5 which may have previously been displayed on display area 2 prior to the screen update which displayed data 6, now has it's status set as previously displayed data. Other data 5, 7, 8, 9 exists in data buffer 1, and is not currently displayed on display area 2 because of size restrictions. Data 7, 8, 9, which heretofore has never displayed has its status set as never displayed data. Scroll bars and controls 15a preferably are employed by the user to invoke moving said data buffer 1, in particular data 5, 6, 7, 8, and 9 through to said display area 2, for various screen updates. ~~and in this operational example where said data buffer 1 was originally accessed from the top, prior to displaying the currently displayed data 6, having earlier displayed a set designated previously displayed data 5. Similarly data 7,~~

Ad
having never been displayed is designated by the algorithm as never displayed data. As a user may travel toward the end of said data buffer 1, to a ~~currently displayed~~ display data set 8, which ~~displays~~ is shown displayed on a display area 3 as displayed data 11, all areas data at this time in the course of events that were previously displayed are designated stated as previously displayed data. Continuing from this given position 8 in said data buffer 1, as the user may choose to initiate a full page scroll down in the display area 3, using controls 15b, whereas the remaining data 9 in said data buffer 1, currently designated as never displayed, and data 9 is being smaller than ~~that~~ what is required to fill a display area 4, the scroll action results in a display area 4 with said never displayed data 9 being displayed in ~~area~~ as data 12, and ~~previously current~~ and now previously displayed data 8 being partially displayed in display area 4, including a means of marking, shading, or otherwise differentiated displayed data 13. Said ~~differentiating~~ marking means allows easy and accurate continuation of viewing by the user whereas the new data 12 is not displayed with a starting location as expected by the user, as may have been the norm for previous scroll events. ~~A particular display area 16 shows currently displayed data 17 and previously displayed data 18 which may occur in the event the user using scrolling means, scrolls backward from a fully current display 10 to redisplay data designated as previously displayed data 5.~~ Display area 16 shows the result of a partial reverse scroll operation initiated from display area 2. In display area 2, data 10 is the displayed data of data 6, and has no shading in the display because all of data 6, which became displayed data 10, was stated as never before displayed data. If the scrolling control 15a is used to partially scroll backwards whereby part of data 5 and part of data 6 is to be displayed on

A4 display area 16, data 5 is displayed as data 18 and data 6 is displayed as data 17. Data 18 is shaded based on the status of data 5 as being previously displayed data.

Please replace paragraph 1 on page 10 with the following rewritten paragraph:

A5 In a different embodiment, returning to Figure 1, a display area 19 incorporates an algorithm which when determining that the requested previously undisplayed data 9, as displayed data 20, requires less area than the display area 19 offers, said algorithm displays the previously undisplayed data 9 at substantially the expected predetermined position in the display area, and further generates and displays null or fill data 21 to fill the remainder of the area. Yet another embodiment incorporates an algorithm means which resizes the viewable area to adjust to incoming buffer data which may be less than that amount needed to substantially fill the viewable area. Shading or other identification means may be used in conjunction with said repeat location method to further identify new and/or old data.

Please add to page 10 between paragraph 2 and paragraph 3 the following paragraph:

A6 Another embodiment of the invention may be shown by the following example. Figure 3 shows a pictorial representation of a data buffer 22, which, in this example contains text data and has more data than can fit in a single intended display area or screen. Data buffer 22 contains data subset 23 and data subset 24, which are sized to approximately equal the size of the intended display area. Figure 4 depicts a display area 25a including a Graphical User Interface, and is currently displaying data subset 23 of

Al
data buffer 22. The display status of data subset 23, as part of data buffer 22, is set to currently displayed data. The display status of any data that is part of data buffer 22, and which has not been displayed, remains set at never displayed data, which is the default status. A display update operation occurs which calls for data subset 24 to now be displayed on display area 25b, replacing data subset 23. Figure 5 shows the result of said display update operation where data subset 24 is now displayed on data display 25b. The display status of data subset 23, as part of data buffer 22, is now set to previously displayed data. Because data subset 23 and data subset 24 share an overlapped portion of common data 26, when data subset 24 is displayed in display area 25b, the common data 26 is displayed even though it was also displayed prior to the display update operation when data subset 23 was displayed on display area 25. This may cause some confusion to a user of the display because data that was displayed prior to the update is still in the display. The common data 26 is part of data subset 23, therefore the display status is set to previously displayed data, and the display status of data subset 24 minus common data 26 is recorded as currently displayed data. Shaded marking 27 is automatically applied to the display area covering previously displayed common data 26 to differentiate said previously displayed common data 26 from said currently displayed data subset 24 minus common data 26. In this example the user's eye is guided by way of the shaded marking 27, to resume viewing data which was not previously displayed.
